

Appl. No. 10/324,229
Amdt. dated December 21, 2004
Reply to Office Action of March 12, 2004

Remarks

The present amendment responds to the Official Action dated September 23, 2004. The Official Action rejected claim 6 under 35 U.S.C. 112. The Official Action rejected claims 1-4 and 6-33 under 35 U.S.C. 102(b) as anticipated by Herman U.S. Patent No. 6,108,367 ("Herman"). The Official Action rejected claim 5 under 35 U.S.C. 103(a) as unpatentable over Herman. These grounds of rejection are addressed below following a brief discussion of the present invention to provide context. Claims 1, 6, 16, 20 and 24 have been amended to be more clear and distinct. Claims 1-24 are presently pending.

The Present Invention

An electronic shelf label (ESL) system according to an aspect of the present invention uses a digital modulation technique for a modulated backscatter uplink from the ESL, in order to transmit information from the ESL to a communication base station (CBS). The ESL modulates pseudo-random sequences onto a continuous wave frequency signal originating at the CBS. In an exemplary embodiment, the CBS transmits a message to an ESL using a Manchester coded amplitude modulated carrier. After receiving the message, the ESL responds by reflectively modulating a continuous wave (CW) signal with a pseudo-random code sequence, so as to impose the pseudo-random code sequence onto the CW signal. The CW signal is transmitted from the CBS to the ESL by the CBS during an uplink phase or timeslot. A plurality of alternative pseudo-random code sequences may be chosen, with each code sequence corresponding to a particular response. In one aspect, the code sequence is modulated onto a

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32.768 kHz carrier which is used to reflectively modulate the CW signal received from the CBS. The CBS then receives the reflectively modulated signal and correlates the received signal to determine the message transmitted.

The 112 Rejection

The Official Action rejected claim 6 under 35 U.S.C. 112 as reciting a term lacking antecedent basis. With the present amendment to claim 6, this ground of rejection has now been overcome and should be withdrawn.

The Art Rejections

All of the art rejections hinge on the application of Herman, standing alone. As addressed in greater detail below, Herman does not support the Official Action's reading of it and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicant does not acquiesce in the analysis of Herman made by the Official Action and respectfully traverses the Official Action's analysis underlying its rejections.

The Official Action rejected claims 1-4 and 6-33 under 35 U.S.C. 102(b) as anticipated by Herman. In light of the present amendments to claims 1, 16 and 24, this ground of rejection is respectfully traversed.

Claim 1, as amended, claims an electronic price label (ESL) system comprising an ESL receiving a message transmitted from a communications base station (CBS). The ESL includes a transmitter for transmitting a response to the message by reflectively modulating a continuous wave (CW) signal with a pseudo-random code sequence so as to impose the pseudo-random code

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sequence on the continuous wave signal. These limitations in the claimed combination are not taught by Herman.

Herman teaches an ESL system including a plurality of transceivers, typically ceiling mounted, and a plurality of ESLs. Each of the transceivers transmits a signal to ESLs within its communication range. The signal transmitted by a transceiver exhibits an underlying Direct Sequence Spread Spectrum Pseudo-Random sequence. When an ESL receives a signal from a transceiver, the ESL performs differential Binary Phase-Shift Keyed (DBPSK) modulation on the received signal. The ESL does not modulate the received signal with a pseudo-random code sequence so as to impose the pseudo-random code sequence on the signal, as claimed by claim 1, as amended. Instead, the only pseudo-random code modulation performed by Herman is performed by the transceiver, not by the ESL. Pseudo-random code modulation of a received signal by the ESL, as claimed by claim 1, as amended, allows for an increased data communication capability by the ESL. Claim 1, as amended, therefore defines over the cited art and should be allowed.

Claim 16, as amended, claims an electronic shelf label (ESL) communication method comprising the steps of transmitting a message to an ESL from a communications base station (CBS) and transmitting a response by the ESL to the message by reflectively modulating a continuous wave (CW) signal with a pseudo-random code sequence so as to impose the pseudo-random code sequence onto the continuous wave signal. As noted above with respect to claim 1, Herman does not teach transmitting a response by an ESL by modulating a continuous wave signal with a pseudo-random code sequence so as to impose the pseudo-random code sequence

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onto the continuous wave signal. Claim 16, as amended, therefore defines over the cited art and should be allowed.

Claim 24, as amended, claims an electronic price label (ESL) comprising an ESL receiving a message transmitted from a communications base station (CBS). The ESL includes a transmitter for transmitting a response to the message by reflectively modulating a continuous wave (CW) signal with a pseudo-random code sequence so as to impose the pseudo-random code sequence onto the continuous wave signal. As noted above with respect to claim 1, Herman does not teach transmitting a response by an ESL by modulating a continuous wave signal with a pseudo-random code sequence so as to impose the pseudo-random code sequence onto the continuous wave signal. Claim 24, as amended, therefore defines over the cited art and should be allowed.

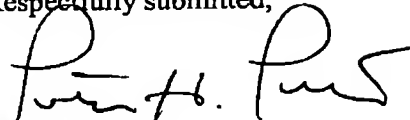
The Official Action rejected claim 6 under 35 U.S.C. 103(a) as unpatentable over Herman. Claim 6 is a dependent claim having claim 1 as a base claim. Because claim 1 has been shown to be allowable, claim 6 should also be allowed.

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Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,



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